

Low-Power, Lightweight Cloud Water Content Sensor, Phase I

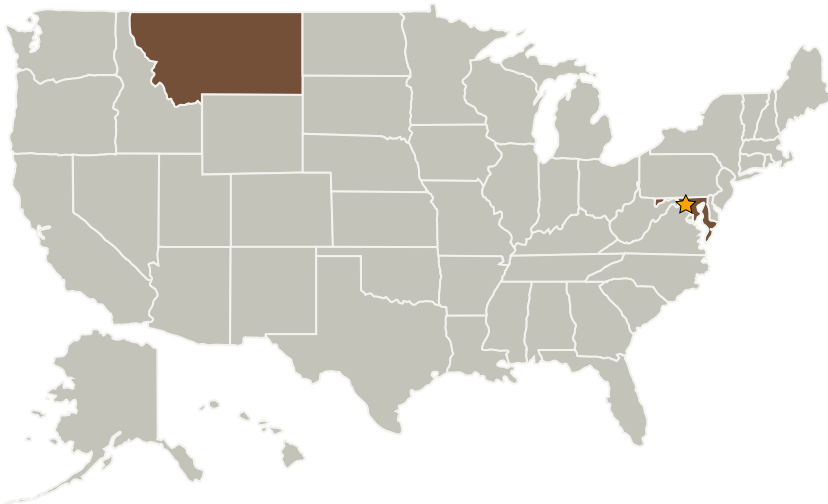
Completed Technology Project (2005 - 2005)



Project Introduction

The water content of clouds, whether in liquid or ice form, is a key variable to be measured when either calibrating remote sensing systems or when calculating the climatological effects of clouds. While a variety of sensors exist for making these measurements, all of the existing sensors require far too much power or other energy input to be used on small platforms with limited payloads such as UAVs, balloons, and kites. Anasphere has developed and completed preliminary testing of a novel cloud water content sensor which does not require any external energy input, but is capable of measuring both liquid water and ice content of clouds. Preliminary results have been extremely promising. Phase I work will include the fabrication and demonstration of proof-of-concept sensors based on the designs investigated in the preliminary research, culminating in a balloon-borne flight with a radiosonde through a cloud. Phase II work will include the refinement of the design, extensive laboratory testing, and extensive field intercomparisons and trials.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland
Anasphere, Inc.	Supporting Organization	Industry	Belgrade, Montana



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Primary U.S. Work Locations

Maryland

Montana

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Project Manager:

Ruth L McWilliams

Principal Investigators:

Adrienne M Ross

John Bognar

Technology Areas

Primary:

- TX07 Exploration Destination Systems
 - └ TX07.1 In-Situ Resource Utilization
 - └ TX07.1.1 Destination Reconnaissance and Resource Assessment